

## ABSTRACT OF THE DISCLOSURE

Structures of direct current motors or ac commutator

5 (Universal) motors which use a concentrated winding on  
the rotor with coils wound around the teeth. The number  
of commutator segments is higher than the number of rotor  
teeth. Several coils are wound around the same tooth.  
The terminals of the coils are connected to different  
10 segments of the commutator. The parallel paths of the  
armature winding are perfectly balanced. An equal  
current distribution through the parallel circuits of the  
armature is maintained and there is no circulation  
current between these parallel circuits. The problems  
15 related to commutation are reduced because the value of  
the coil inductances is low. The copper volume of the  
end-windings, the Joule losses and the axial length of  
the motor armature are lower than a lap or a wave winding  
with interlocked coils. Two kinds of structures with a  
20 concentrated winding are presented : some with rotor  
teeth with identical dimensions and some with rotor teeth  
with different dimensions.